

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

NEW COURSE PROPOSAL

PROGRAM AREA _____

- 1. Catalog Description of the Course.** *[Include the course prefix, number, full title, and units. Provide a course narrative including prerequisites and corequisites. If any of the following apply, include in the description: Repeatability (May be repeated to a maximum of ___ units); time distribution (Lecture ___ hours, laboratory ___ hours); non-traditional grading system (Graded CR/NC, ABC/NC). Follow accepted catalog format.]*

BIOL 301. MICROBIOLOGY (4)

Three hours of lecture and three hours of laboratory per week.

Prerequisites: CHEM 122; BIOL 201 with a grade of C or better.

Study of microorganisms of the environment, including disease-causing organisms, their structures and functions and their interactions to their host animals and the environment. A lab fee is required.

- 2. Mode of Instruction.**

	Units	Hours per Unit	Benchmark Enrollment
Lecture	___3___	___1___	___24___
Seminar	_____	_____	_____
Laboratory	___1___	___3___	___24___
Activity	_____	_____	_____

- 3. Justification and Learning Objectives for the Course.** (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) *[Use as much space as necessary]*

Microbiology is a required course for Biology students in the Cell and Molecular Biology emphasis and is an elective course for other Biology students and for Environmental Science and Resource Management students in the Environmental Science emphasis. It is a study of microorganisms of the environment, including disease-causing organisms, their structures and functions and their interactions to their host animals and the environment. It provides valuable knowledge and skills to students in studying disease-causing microbes such as bacteria, viruses, fungi and protozoa. It is a highly relevant course particularly in this era of global epidemics of numerous infectious diseases and potential biological warfare.

Students completing this class should be equipped with the knowledge and skills to:

1. Describe cellular and/ or molecular, biochemical, physiological and genetic aspects of the microbial cell such as bacteria, fungi and protozoa as well as microbial agents like viruses, viroids and prions.
2. Relate normal cellular and molecular structures to their functions.
3. Explain cellular processes and mechanisms that lead to physiological functions as well as examples of pathological state.
4. Apply modern cellular techniques to solve aspects of scientific problems.
5. Describe the intricate relationship between various cellular structures and their corresponding functions.

- 4. Is this a General Education Course** **YES** **NO**
If Yes, indicate GE category:

A (English Language, Communication, Critical Thinking)	
B (Mathematics & Sciences)	
C (Fine Arts, Literature, Languages & Cultures)	
D (Social Perspectives)	
E (Human Psychological and Physiological Perspectives)	

- 5. Course Content in Outline Form.** [Be as brief as possible, but use as much space as necessary]

Historical development of microbiology

Structure and function of eucaryotic cells
Structure and function of prokaryotic cells
Introduction to virology
Growth and metabolism of microorganisms
Microbial genetics
Control of microorganisms
Host-microbe interaction and immunology
Human diseases caused by bacteria
Human diseases caused by viruses
Human diseases caused by fungi & protozoa
Psychological, social and economic impact of infectious diseases
Laboratory techniques in clinical and research settings

6. References. *[Provide 3 - 5 references on which this course is based and/or support it.]*

1. **Microbiology**, Lansing M. Prescott, John P. Harley, Donald A. Klein Prescott, McGraw-Hill Science/Engineering/Math; ISBN: 0072485221; 5th edition (August 3, 2001)
2. **Microbiology, Tolora, et al.**, Benjamin/Cummings; ISBN: 080537597X; 7th Bk&cdr edition (September 14, 2001)
3. **Microbiology: Principles and Explorations**, Jacquelyn G. Black, John Wiley & Sons; ISBN: 0471387290; 5th edition (January 2002)
4. **Fundamentals of Microbiology**, I. Edward, Ph.D. Alcamo, Jones & Bartlett Pub; ISBN: 0763710679; 6th edition (January 15, 2001)
5. **Laboratory Fundamentals of Microbiology**, I. Edward, Phd Alcamo, Jones & Bartlett Pub; ISBN: 0763712353; 6th spiral edition (January 15, 2001)
6. **Microbiology: A Laboratory Manual (6th Edition)**, James G. Cappuccino, Natalie Sherman, Benjamin/Cummings; ISBN: 0805376488; 6th Labmn edition (July 2, 2001)

7. List Faculty Qualified to Teach This Course.

Ching-Hua Wang or other biology faculty member

8. Frequency.

a. Projected semesters to be offered: Fall x Spring x Summer

9. New Resources Required.

- a. Computer (data processing), audio visual, broadcasting needs, other equipment
- b. Library needs
- c. Facility/space needs

Biology teaching laboratory with standard laboratory equipment and supplies.

10. Consultation.

Attach consultation sheet from all program areas, Library, and others (if necessary)

11. If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification.

<u>Ching-Hua Wang</u>	<u>1-3-03</u>	
Proposer of Course	Date	